

farction or hemorrhage. This is a reasonable formula that places proper emphasis on the clinical assessment. By way of review, the expected findings with an acute peripheral vestibular lesion are mild to moderate gait instability with a tendency to fall toward the side of the lesion, unidirectional spontaneous nystagmus that is inhibited with fixation and rapid improvement within the first 48 hours. Clearly, a small minority of vertiginous patients require a CT scan of the brain to rule out a cerebellar hemorrhage or infarction.

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Hyperinfection Syndrome in a Renal Transplant Recipient

ELSEWHERE in this issue Dr Hirschmann and co-workers discuss in detail a case of strongyloidiasis in a patient who had had a renal transplant. It is seldom that we find such an abundance of medical wit and philosophy dispensed in equal measure with diagnostic acumen in a clinicopathologic conference. In addition to reaching a correct diagnosis, the discussant covered very well virtually all of the important clinical aspects of strongyloidiasis.

Before expanding a bit on some features of strongyloidiasis, it might be appropriate to at least mention another parasite, namely *Toxoplasma gondii*, that might have been considered in association with such complicated illness in an immunodeficient host. While toxoplasmosis can cause skin lesions and pulmonary involvement, the skin lesions are likely to be vasculitic and definitely not pyogenic in nature. The pulmonary lesions are also much less prominent and nondescript in nature. In addition, central nervous system invasion is often a terminal feature of toxoplasmosis in an immunocompromised patient.

Bringing the discussion back to strongyloidiasis, one of the first points to emphasize is that exposure to this parasite does not require travel to or residence in the tropics. While strongyloidiasis is much more common in certain geographic areas, such as in Southeast Asia, it also occurs in the United States. In fact, the parasite is better adapted to transmission in an unsanitary environment than many other intestinal helminths by virtue of its rapid transformation to the infective stage. This may help explain why infection with *Strongyloides stercoralis* is seen in mental institutions and in asylums where hygienic conditions are more often compromised.¹

Incidentally, the Australian experience referred to by Dr Hirschmann in World War II soldiers interred in Japanese prisoner of war camps was also reported from England.² A similar experience has been noted

also in the United States military during World War II by Pelletier.³ This documentation indicates that parasites from some areas of the world are capable of persisting indefinitely in a human host, presumably by a low level of internal autoinfection, and this raises an interesting question as to why immunity in this infection is not more effective.

The pulmonary symptoms present in the case described in this issue deserve a few additional comments. First, the adult female parasite may sometimes be found in the lungs as well as in the upper small bowel, so that larvae found in sputum may be produced there and not be simply in transit through the lungs. In fact, in this particular case the larvae shown in Figure 2 of the Specialty Conference in this issue are compatible with larvae transiting the lungs, at or beyond the filariform stage, rather than the rhabditiform stage. If authentic rhabditiform larvae are seen in the sputum this is an indication that female worms are present and the infection may be somewhat more difficult to treat than if the infection is only intestinal.

Another point with regard to pulmonary involvement is that in some patients asthmatic symptoms develop with *Strongyloides* infection. The wheezing and dyspnea described in this patient may have been due to bronchial constriction on an allergic basis and not simply to a Gram-negative pneumonia. Occasionally, the prominent asthmatic features of *Strongyloides* infections seen in some patients may be reminiscent of tropical pulmonary eosinophilia with diffuse pulmonary infiltrates bilaterally, leukocytosis and a striking degree of eosinophilia. Incidentally, eosinophilia is very commonly seen in patients infected with *S. stercoralis*, although usually a patient has an eosinophilia on the order of 10% to 25%. In this case, of course, eosinophilia may have been suppressed by the large doses of steroids or, as pointed out by Dr Hirschmann, some patients with overwhelming strongyloidiasis, even when not receiving steroids, do not mount a peripheral eosinophil response. A recently described enzyme-linked immunosorbent assay test for antibody to larval antigen may be helpful in diagnosis because larval excretion can be irregular and laboratory personnel may be inexperienced in examining stool or sputum specimens for larvae.⁴

It is interesting that diffuse pulmonary infiltrates are frequently described in fatal cases of strongyloidiasis reported in the literature. The pathologic description in these cases often comments on the hemorrhagic lungs. This is of some interest because in recent work with a monkey model of overwhelming strongyloidiasis it was reported that hemorrhagic lungs are an invariable feature of fatal overwhelming *Strongyloides* infection in the patas monkey.⁵

Finally, I would take exception with one of the points made in the discussion of the case that the finding of filariform larvae in a stool or sputum specimen makes a diagnosis of overwhelming strongyloidiasis conclusive. Certainly the finding of filariform larvae in a sputum specimen indicates that larvae are transiting

the lungs and that some degree of internal autoinfection is taking place. However, depending on conditions of gastrointestinal motility and the speed with which fecal material transits the bowel, and the newer appreciation of the fact that perhaps most infections with this parasite involve some degree of internal autoinfection, the interpretation of filariform larvae in the stool must be more guarded. The term "overwhelming strongyloidiasis" has been used in the literature synonymously with hyperinfection syndrome, both somewhat ambiguous expressions. I prefer the term hyperinfection syndrome to indicate a clinical situation in which there is widespread larval invasion of many tissues and a severe degree of internal autoinfection.⁶ Perhaps the term hyperinfection should carry a certain connotation of the clinical state of a patient as well, because it should indicate a *Strongyloides* infection that is out of control both clinically and parasitologically.

Fortunately, there was a happy ending in this case because the diagnosis was made in time to initiate specific therapy and thus the infection was controlled and the patient recovered. In view of the many reports in the literature on hyperinfection syndrome, it is apparent that the ending is not always such a happy one.

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Where Should the Hard Decisions in Health Care Be Made?

ONE SENSES THAT there is a slow but perceptibly growing awareness that there will be hard decisions ahead in health care. Just what these decisions will be remains murky in the minds of many of us. At the same time it is becoming very clear that things cannot go on as they are indefinitely. Rising expectations and rising costs are on a collision course with relatively limited resources that can never be sufficient to meet all the demands and expectations for health care. It seems that the hard decisions to be made will boil down to who will get what kind of health care, and the question is where should these decisions be made?

Very briefly, the root causes of the rising costs are the new science and new technology being applied in patient care, the fact that someone other than the patient or provider pays most or all of the costs and that the population as a whole is aging rapidly and requir-

ing more and increasingly expensive care. None of this is easily changed in our society. In fact, there will be more science and technology, more elderly people and higher health care costs for the foreseeable future. The efforts at cost containment have proved no match for these causes of rising costs, nor are they likely to. The list of cost containment measures is familiar. They have been little more than generally very expensive Band-Aids. Stronger measures may well be imposed by those who pay the costs, whether in the public or private sector, but these will be difficult to enforce. Any efforts to limit care will be resisted by patients and providers alike, because Americans have been educated to know what good care is and to expect it. And the courts are likely to support a patient's right to care of good quality, and indeed they are already doing this without any particular regard for the impact of their actions on cost. All of this is to say that the outlook for cost control in patient care by any of the means that have been tried to date seems bleak indeed. On the contrary, further increases in health care costs appear inevitable.

But if rising health care costs are an irresistible force, by the same token, the limits on what can be afforded for health care will eventually become a relatively immovable object. As this occurs the hard decisions will have to be faced when it becomes evident that everything cannot be done for everybody. What are some of the options? One might be to say that you can have it if you can pay for it; otherwise, tough luck. Another might be simply to restrict what is available to what can be afforded for everyone. Neither of these options would seem to be acceptable to the American people, although some compromise between them might be. But any compromise will pose difficult social, ethical, economic and political problems in our interdependent yet independent, very human and very technologic society. Some of these are already becoming all too obvious as some of the hard decisions begin to be faced.

Already in the "Baby Doe" controversy a fundamental question has been raised. Should these hard decisions (in this case whether substantial resources, both human and technologic, will be used to save a very severely compromised infant) be made by applying a federal law, or should they be made by some kind of a consensus reached among those most directly involved? In this controversial case the federal government seems bent on playing the role of "Big Brother" who knows best, while the courts, the health professionals and a very distressed family believe this kind of hard decision is better made in individual situations by those in a position to know more precisely what is at stake for all concerned. This issue and all the hard questions about who will get what kind of health care are issues that strike at the heart of what America is all about.

It is tempting to turn to government, to say that this is what governments are for—to solve problems like this in the best interests of all the people. But there is something different about health care. It is something very personal and it often pits one person's individual